REMARKS

Claim 60 has been amended and new independent claims 65-70 have been added to more particularly point out and distinctly claim Applicant's invention. Claims 9, 24, 25, 29, 46 and 47 have been cancelled in their entirety, without prejudice.

Claims 9, 14, 15, 24, 25, 27, 29, 39, 42-44, 46, 47, 50, 51, 54, and 55 stand objected to as being dependent upon a rejected base claim, but allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. By this amendment, claim 9 has been cancelled and the limitations thereof incorporated into independent claim 1. Further, dependent claims 24, 25, 29, 46 and 47 have been rewritten as new claims 65-69 to incorporate all of the limitations of the base claim from which each cancelled dependent claim depended. Accordingly, it is submitted that claims 1-8, 10 and 65-69 are allowable as presently written. New matter is not introduced by these amendments. Specifically, support for inclusion of the term "subterranean well" in independent claim 67 in lieu of "oil and gas well" as set forth in cancelled dependent claim 29 is located on page 1, lines 6-9, page 7, lines 21-23, page 13, lines 35-37, page 14, lines 33-35, and page 15, lines 11-13 of the specification of the captioned application as originally filed and claims 3, 19 and 37 as originally presented.

Claims 1-7, 10-13, 16-19, 21-23, 26, 28, 30-32, 34-38, 40, 41, 45, 48, 49, 52, 53 and 56-58 stand rejected under 35 U.S.C. § 102 (b) as being anticipated by McDonald et al. Independent method claim 11 calls in part for transmitting electromagnetic signals from an inside of the non magnetic metal tubular section, through the sidewall of the non magnetic metal tubular section, to an antenna positioned on an outside of the non magnetic metal tubular section. McDonald et al. discloses using a downhole probe unit 10 to sample acceleration, magnetic and impedance measuring sensors, encode the sampled data and transmit data to the surface using an electromagnetic (EM) technique. In accordance with this EM technique, the data received by the downhole microcontroller 16 is encoded in a digital format and impressed upon the drill string. The electromagnetic wave which is transmitted on the drill pipe is picked off at the surface

for processing and display using one of two types of pickups. The first type of pickup is a simple antenna 200 which is laid on the surface parallel to the drill pipe. It can be used for shorter distances and air-drilled holes. For longer holes, direct-coupled recovery of the signal is preferred. McDonald et al. transmits an electromagnetic signal on a drill pipe (not through the sidewall of the drill pipe as set forth in independent claim 11) to an antenna laid at the surface of the earth (not to an antenna positioned on the outside of the drill pipe as set forth in claim 11). Similar limitations to that contained in claim 11 and discussed above are contained in independent claims 31 ("antenna outside of a tubular proximate to the non-metallic metal section configured to receive electromagnetic signals transmitted through the non magnetic metal section"), 38 ("an antenna outside the non magnetic metal section"), 45 (an antenna outside the metal tubular proximate to the non magnetic metal tubular section"), and 53 ("a transmitter device inside the metal tubular configured to transmit electromagnetic signals through the sidewall of the non magnetic metal tubular section to the antenna"). Further, independent claim 21 calls in part for "moving a transmitter device configured to emit electromagnetic signals through ... the non magnetic metal tubular section". In contrast, the probe 10 of McDonald et al. is secured to non magnetic drill collar C in a fixed relationship and as such is not moved through the drill collar C of McDonald et al. as called for in claim 21 of the instant application, i.e. both the probe 10 of McDonald et al. and the drill collar C are moved together into position within the well . A similar limitation is contained in independent claim 38 ("a transmitter device configured to move though ... the non magnetic metal section"). It is well settled that an anticipatory reference under 35 U.S.C. §102 must identically disclose every claimed element of the anticipated invention. For reasons set forth above, it is submitted that McDonald et al. does not identically disclose or describe a method or system as set forth in independent claims 11, 21, 31, 38, 45 and 53 of the instant application. In view of the foregoing, it is submitted that the rejection of claims 1-7, 10-13, 16-19, 21-23, 26, 28, 30-32, 34-38, 40, 41, 45, 48, 49, 52, 53 and 56-58 under 35 U.S.C. §102 (b) as being anticipated by McDonald et al. is improper and should be withdrawn.

Claims 1-8, 10-13, 16-20, 31-33, 35 and 37 stand rejected under 35 U.S.C. § 102 (b) as being anticipated by Waters et al. Waters et al. discloses a single tool for many

combinations of drilling steering, directional surveying, magnetic ranging, formation evaluation logging and measurement of dynamic mechanical properties of the drillstring. This combination tool could be provided with either a mud pulse telemetry system in an MWD configuration or an electric line telemetry system or both. The combination downhole tool is also provided with apparatus for formation evaluation or correlation, such as electric logging or radioactive logging, and apparatus for detecting other well and formation parameters such as, conductivity, resistivity, porosity, temperature, etc. The tool system also incorporates a system for telemetry, such as a drilling fluid column pulser, a single conductor wireline, electromagnetic wave transmission and receiving apparatus, or solid state recoverable memory for efficiently transmitting all of the well and formation data to signal receiving equipment located at the surface while drilling is in progress. With the addition of electromagnetic: transmitters and receivers to the tool having spaced receiver antennas, at known and constant distances from the transmitting antennas, the formation can be logged by propagating electromagnetic waves and measuring or inferring the resistivity from difference in phase between the two signals at the receiving antennas. An electromagnetic wave propagation resistivity logging tool works well with many mud types, has excellent resolution, and requires less nonconducting material than many other logging tools. These sensors could be built into a steel collar without the requirement of a non-magnetic material. The receiver component would be a dual channel super heterodyne receiver with a highly stable phase detector. Both the transmitter and receiver are interfaced and connected to the multiplexing and digitizing apparatus for telemetry to the surface.

Waters et al. does not disclose positioning an antenna for detecting electromagnetic signals on the outside of a non magnetic metal tubular section as called for by independent claims 11 and 31. Further Waters et al. teaches away from even including an antenna near a non magnetic section, since at column 20, lines 59-65 Waters et al. states that "[a]n electromagnetic wave propagation resistivity logging tool works well with many mud types, has excellent resolution, and requires less nonconducting material than many other logging tools. These sensors could be built into a steel collar without the requirement of a non-magnetic material." It is well settled that an anticipatory reference under 35 U.S.C. §102 must identically disclose every claimed

element of the anticipated invention. For reasons set forth above, it is submitted that Waters et al. does not identically disclose or describe a method or system as set forth in independent claims 11 and 31 of the instant application. In view of the foregoing, it is submitted that the rejection of claims 1-8, 10-13, 16-20, 31-33, 35 and 37 under 35 U.S.C. §102 (b) as being anticipated by Waters et al. is improper and should be withdrawn.

Claims 60—64 stand allowed.

In view of the foregoing, allowance of claims 1-8, 10-23, 26-28, 30-45 and 48-70 is solicited.

Respectfully Submitted,

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